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Amended
- (a) a wireless communications connection
- (i) between the workstation and the AV path
24. (New) The teleconferencing system of claim 23, wherein the wireless communications connection is configured to
- (a) accept signals transmitted along cellular telephone channels.

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**REMARKS**

This is a Response to an Office Action dated July 17, 1998. In this Office Action, the specification has been objected to; claims 3-6 and 12 have been rejected under 35 U.S.C. § 112, first paragraph; claims 1-4 have been rejected under § 102(e); and claims 5-15 have been rejected under § 103(a).

Applicants respectfully request reconsideration in view of the above amendments and the arguments presented below.

***Objections to the Specification***

On page 1 of the Office Action, the Examiner objects to the application as not containing an abstract of the disclosure. Applicants attach here and on a separate sheet of paper, an Abstract for the disclosure of the present invention.

The Examiner also objects to the specification as failing to provide enabling disclosure. This objection is addressed below where Applicants respond to the rejection of claims 3-6 and 12 as lacking enablement.

***Rejection of the Claims******Rejections Under 35 U.S.C. § 112, First Paragraph***

On page 1 of the Office Action, the Examiner rejects claims 3-6 and claim 12, under 35 U.S.C. § 112, for lack of enablement. More specifically, the Examiner states:

Claims 3-6, 12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not explain or specify what is contained in claims 3 and 12.

In response, Applicants point out that support for claims 3, 4 and 12 can be found at lines 9 to 10 on page 28 of the application as filed. In addition, the technology used to create the

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audio effects of claims 3 and 12 is described in many different articles predating the filing date of this application. Copies of these articles are attached and are also submitted under IDS. The use of such techniques in video conferencing is well known (as illustrated by the articles) and, therefore, a relatively brief description of the concept is sufficient to enable one skilled in the art without having to resort to any undue experimentation. Indeed, as the test of enablement is “whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation”, a “patent need not teach and *preferably omits*, what is known in the art.”<sup>1</sup>

As to the wireless limitations of claims 5 and 6, a clear description providing the basis for these claims is found on page 64 of the application, upon which a specific example of a user using the wireless communication system is described. Additionally, line 30 (page 23) through line 4 (page 24) of the application describe how in certain circumstances it can be “advantageous to set up a laptop to operate with the functionality via cellular telephone links....”.

For all these reasons, Applicants respectfully believe that claims 3-6 and claim 12 are adequately supported by the specification, sufficient to enable one skilled in the art to practice the invention claimed. Accordingly, Applicants respectfully request that the § 112 rejections be withdrawn.

*Rejections Under 35 U.S.C. § 102(e)*

On page 3 of the Office Action, the Examiner rejects claims 1-4, under 35 U.S.C. § 102(e), as being anticipated by U.S. Pat. No. 5,365,265 to Shibata et al. (“Shibata”). More specifically, the Examiner states:

Claims 1-4, are rejected under 35 U.S.C. 102(e) as being anticipated by Shibata et al. (US Pat. 5,365,265 filed 07/15/92 hereinafter Shibata).

Regarding claim 1, Shibata discloses multipoint teleconference system comprising: AV capture and reproduction capabilities (200,210) for capturing video images and spoken audio of a participant in a videoconference; a monitor in 200 for displaying visual images associated with at least one participant; audio reproduction capabilities in 210; and an echo canceler 1200 (Fig. 12) in the audio processor 212 to reduce echo during reproduction of the audio (Figs. 2, 12, 13, col. 3 lines 64-58, col. 4 lines 1-62, col. 12 lines 13-25).

Regarding claims 2-3, 4, Shibata further shows the following: an audio adder 1212 (audio summer) for receiving the captured audio of first, second and third participant and combing the received audio of the second and third participants into an audio sum for reproduction at the apparatus of the first participant (Fig. 12, 13, col. 4 lines 56-63, col. 12 lines 64-68, col. 13 lines 1-35); an audio control configured to cause the reproduction of the audio sum at the participants

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<sup>1</sup> M.P.E.P. § 2164.01 (Rev. 3, July 1997) (citing *In re Buchner*, 929 F.2d 660, 661, 18 U.S.P.Q.2d 1331, 1332 (Fed Cir. 1991)).

work station such that the composition of the audio originating from each of the second and third participant's reproduced at each speaker is dependant on a position of the second and third participants images reproduced on the first participants's workstation monitor; an echo canceler 1200 (Fig. 12) is included in the housing (Figs. 2-5, col. 4 lines 42-68, col. 5 lines 1-38).

In response, Applicants wish to point out that Claim 1 has always been limited to a *unitary housing* that includes AV capture, a monitor and audio reproduction capabilities. Claim 1 has now also been amended to more clearly define that the claimed echo canceler is an adaptive acoustic echo canceler. The adaptive acoustic echo canceler is described/referred to on pages 25 to 28 of the application. A very specific description is found on page 27 lines 6 onward.

This adaptive acoustic echo canceler (by necessity requiring a large number of "delay" elements) is very different from the network echo cancellation (single-delay element) technique employed by Shibata. Adaptive acoustic echo canceling takes into consideration the continuum of echoes resulting from many different surfaces (and different places on the same surface) in a room where the unitary housing is placed. A complex echo canceler "training" (by the use of wideband noise at calibration) procedure is required to determine the full continuum of echoes, resulting from sound bouncing off different areas of the surfaces at different distances from the speaker. This allows the room echoes to be mathematically modeled so that, once trained, the echo canceler can use this mathematical model to "subtract out" the echo of a user of the workstation.

In contrast, the single stage network echo cancellation technique of Shibata attempts to cancel out the echo caused by the implementation of a remote audio mixing summing system. Shibata takes the audio from a user and transmits it to a central place where it is assembled into a single mix of audio from all users. This single audio mixed is then transmitted back to each individual user and arrives delayed in time. At this time, the receiving user's own audio must be subtracted from the mix. But, because of the delay described above, to subtract out a recipient user's own audio, a single time delay is required on the locally generated audio signal before subtraction. If not, an "echo," caused by the delay, results.

This is a vastly different system from the acoustic echo canceler claimed. Two primary differences are evident. First, an adaptive acoustic echo canceler cancels the echo of the environment in which the speaker is located while the Shibata echo canceler cancels (actually, reduces is a better word) the presence of a user's outgoing audio from that same user's received audio mix during a conference. Second, the network acoustic echo canceler cancels the echo of a

first speaker's voice for the advantage of the *recipients* of that audio. Shibata cancels (subtracts) user's own audio for the advantage *of that user*, not for the other users.

Accordingly, these are totally different techniques solving totally different problems and cannot be applied one to the other. Therefore, Shibata cannot support a Section 102 rejection.

Furthermore, the claimed unitary housing (another feature not shown in Shibata) has a very interesting *non-obvious* advantage for the claimed echo cancellation technique. Adaptive acoustic echo cancellation requires sophisticated modeling of an environment that includes objects from which sound is reflected. To do so, it takes into account *the relative positioning* of speakers and microphones. The unitary housing has the distinct advantage that the relative position of the speakers and microphone(s) are known – because they are built into fixed positions in the housing – at the time of manufacture. This allows the claimed echo canceler to be, at least in part, “pretrained,” making the echo canceling quicker, more efficient and more reliable.

Shibata can therefore not support a §102 rejection. It doesn't show a unitary housing as claimed and it doesn't show the claimed echo cancellation. Also, for the reasons directly above, Shibata cannot support an obviousness rejection.

*Rejections Under 35 U.S.C. § 103(a)*

On pages 3-4 of the Office Action, the Examiner rejects claims 5 and 6, under 35 U.S.C. § 103(a), as being unpatentable over Shibata in view of U.S. Pat. No. 5,485,504 to Ohnsorge (“Ohnsorge”) and U.S. Pat. No. 5,374,952 to Flohr (“Flohr”). More specifically, the Examiner states:

Claims 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata in view of Ohnsorge (US Pat. 5,485,504, the subject matter claimed is in the parent application filed on 07/15/92) and Flohr (US Pat. 5,374,952, the subject matter claimed is in the patent application filed on 06/03/93).

Regarding claims 5, 6 Shibata does not teach the following: a wireless communication connection between the housing and a signal transmitting network; docking station for adding bandwidth to signals at the housing; wireless communication connection configured to accept signals transmitted by cellular telephone channels.

However, Ohnsorge discloses hand-held radio telephone with video transmission and display which teaches wireless communication connection between the housing and a signal transmitting network; wireless connection configured to accept signals transmitted by cellular telephones (Fig. 1, 2, col. 2 lines 1-36).

Flohr discloses video conferencing system which shows PC nodes 101 (docking station) for adding bandwidth to signals at the housing (Fig. 8, col. 13 lines 19-27).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Shibata's system to have the following: a wireless communication connection between the housing and a signal transmitting network, wireless communication connection configured to accept signals transmitted by cellular telephone channels, as this would

offer independence and freedom to move the housing to any location without being constrained by the availability of communication connection and also would enable to receive cellular calls; docking station for adding bandwidth to signals at the housing as this would allow full video conferencing capability of the system for the user.

The Examiner, in this rejection of the wireless claims, has cited Ohnsorge, a radio telephone patent. But, Ohnsorge cannot be combined with the adaptive acoustic echo cancelling technique of claim 1. Adaptive acoustic echo canceling in the mobile unit environment is almost impossible. The mobile unit, by definition, moves around all the time. Such movement makes the required "training" or initialization of the claimed echo canceler either unfeasible (at best) or impossible. Combining the radio telephone technology with any reference, to obtain the claimed invention, is neither obvious nor will it lead to a workable device. Thus, this §103 rejection cannot, it is submitted, stand

On pages 5-6 of the Office Action, the Examiner rejects claim 7, under § 103(a), as being unpatentable over Shibata in view of Flohr. More specifically, the Examiner states:

Regarding claim 7, Shibata shows the following: plurality of workstations (Fig. 1) each including a unitary housing having a first monitor in 200 for displaying video images, and AV capture and reproduction capabilities (200,210) for capturing and reproducing video images and spoken audio of the participants; a network (second network) for providing an AV path, for carrying AV signals representing video images and spoken audio of the participants, among workstations for reproduction at least one monitor associated with the workstation for the participant (Fig. 2, col. 3 lines 66-68, col. 4 lines 1-33).

Shibata differs from the claimed invention in not showing: a network (first network) providing a data path along which data can be shared among a plurality of the participants and displayed on the monitor.

However, Flohr teaches the use of LAN cable 100 that provides data path along which data can be shared among a plurality of the participants and displayed on the monitor (Fig. 8 col. 13 lines 19-37).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Shibata's system to provide a network (first network) providing a data path along which data can be shared among a plurality of the participants and displayed on the monitor as this would provide an economical way of transmitting data using low bandwidth network.

Claim 7 includes a limitation to a unitary housing, which as described above is not described in Shibata. Also, Flohr does not teach data conferencing as claimed here. This distinction has already been made in parent application 08/650,123 and has been accepted by the

PTO. Accordingly, a *prima facie* case of obviousness cannot be made out.<sup>2</sup> As such, Applicants respectfully request that the § 103(a), as applied to claim 7 be withdrawn.

On pages 6-7 of the Office Action, the Examiner rejects claims 8-13, under § 103(a), as being unpatentable over Shibata in view of Flohr and U.S. Pat. No. 5,444,476 to Conway ("Conway"). More specifically, the Examiner states:

Claims 8-13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata in view of Flohr as applied to claim 7 above, and further in view of Conway (US Pat. 5,444,476, filed 12/11/92).

Regarding claim 8, 9, the combination does not teach the use of the following: at least one second monitor for displaying visual images associated with at least one work station, and second monitor is affixed to a side portion of the first monitor at approximately the eye-level of a participant in a teleconference who is using the workstation.

However, Conway discloses system and method for teleinteraction which teaches the use of second monitor B for displaying visual images associated with at least one work station, and second monitor is affixed to a side portion of the first monitor at approximately the eye-level of a participant in a teleconference who is using the workstation (Fig. 1, col. 5 lines 18-68, col. 6 lines 1-68, col. 7 lines 1-15).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to have at least one second monitor for displaying visual images associated with at least one work station, and second monitor is affixed to a side portion of the first monitor at approximately the eye-level of a participant in a teleconference who is using the workstation as this would enable greater teleinteraction among the participants as taught by Conway.

Regarding claims 10-13, modified by claim 8, Shibata further shows the following: an echo-canceller 1200 (Fig. 12) to reduce echo during the reproduction of the audio; an audio adder 1212 (audio summer) for receiving the captured audio of first, second and third participant and combining the received audio of the second and third participants into an audio sum for reproduction at the apparatus of the first participant (Fig. 12, 13, col. 4 lines 56-63, col. 12 lines 64-68, col. 13 lines 1-35); an audio control configured to cause the reproduction of the audio sum at the participants work station such that the composition of the audio originating from each of the second and third participant's reproduced at each speaker is dependant on a position of the second and third participants images reproduced on the first participants's workstation monitor; an echo canceler 1200 (Fig. 12) is included in the housing (Figs. 2-5, col. 4 lines 42-68, col. 5 lines 1-38).

On pages 7-8 of the Office Action, the Examiner rejects claims 14 and 15, under § 103(a), as being unpatentable over Shibata in view of Flohr and Ohnsorge. More specifically, the Examiner states:

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<sup>2</sup> To establish a *prima facie* case of obviousness of a claimed invention: "all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03 (Rev. 3, July 1997) (citing *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974)).

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata in view of Flohr as applied to claim 7 above, and further in view of Ohnsorge.

Regarding claims 14, 15, the combination does not teach the following: a wireless communication connection between the housing and a signal transmitting network; wireless communication connection configured to accept signals transmitted by cellular telephone channels.

However, Ohnsorge discloses handheld radio telephone with video transmission and display which teaches wireless communication connection between the housing and a signal transmitting network; wireless connection configured to accept signals transmitted by cellular telephones (Fig. 1, 2, col. 2 lines 1-36).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Shibata's system to have the following: a wireless communication connection between the housing and a signal transmitting network, wireless communication connection configured to accept signals transmitted by cellular telephone channels, as this would offer independence and freedom to move the housing to any location without being constrained by the availability of communication connection and also would enable to receive cellular calls thus enhancing the versatility of the system.

Claims 8, 9 and 11-15 depend from independent claim 7. As such, claims 8, 9 and 11-15 each depend from an independent base claim, which Applicants argued above are in a condition for allowance.

Furthermore, claim 10 includes the echo cancelling limitation discussed with reference to claim 1. For the same reasons as given in the discussion on claim 1, claim 10 should be allowable. Accordingly, Applicants believe that these claims are also in a condition for allowance<sup>3</sup> and Applicants respectfully request that the § 103(a) rejections of these claims be withdrawn.

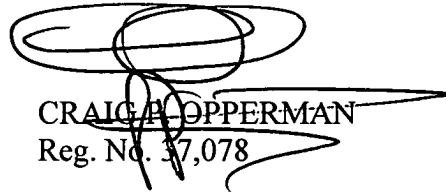
As to the newly added claims, these all contain a limitation to the *unitary housing* and the data conferencing aspect. It is submitted that, for the reasons given above, these new claims are neither anticipated by the references.

## CONCLUSION

In conclusion, for the reasons provided above, Applicants respectfully believe that independent claims 1 and 7 are in a condition for allowance. Dependent claims 2-6, which depend from claim 1 and claims 8, 9, and 11-15, which depend from claim 7, are also believed to

be allowable as they depend from allowable base claims. Allowance at an early date would be appreciated. Should the Examiner have any questions or comments, he is encouraged to call the undersigned to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,



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...(continued)

<sup>3</sup> M.P.E.P. § 2143.03 (Rev. 3, July 1997) (citing, *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988)).